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Gehring et al.

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(54) **CONTAINER HOLDING ASSEMBLY**

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(58) **Field of Search** 248/311.2, 311.3, 248/309.1, 314, 315, 316.3, 316.5; 224/282, 284.1, 926; 297/188.14, 188.17, 188.16

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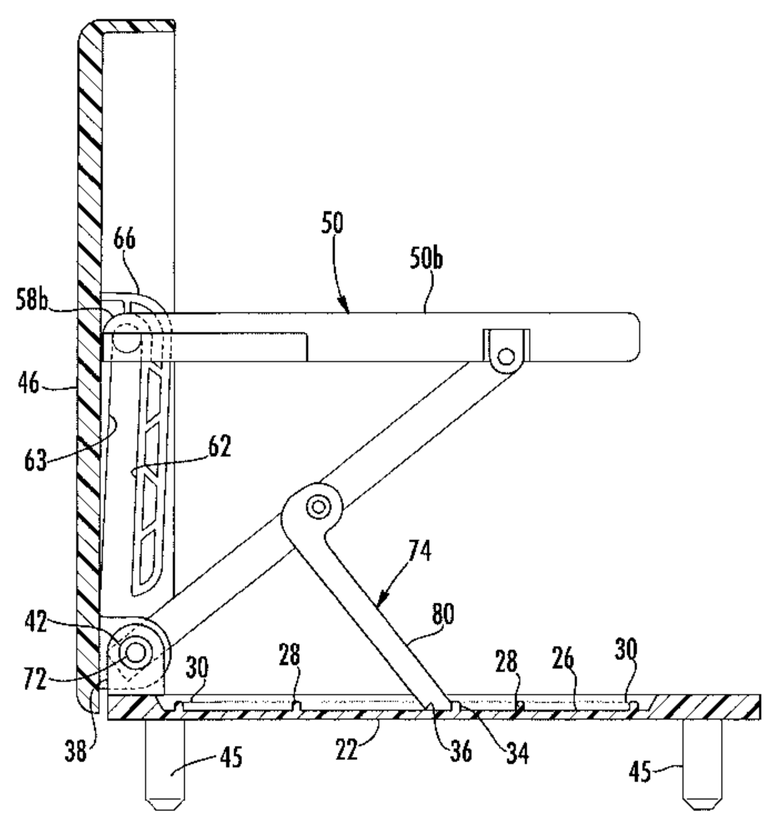
(57) **ABSTRACT**

The container holding assembly includes a base defining a planar surface. The container holding assembly also includes a lid which is pivotally secured to the base at a pivot point offset from the base. A stabilizing arm is connected to the lid. The stabilizing arm is movable between a retracted position when the lid is in a closed position and a stabilizing position when the lid is in an open position. The stabilizing arm includes two back ends which move through slots defined by protrusions extending out from the interior surface of the lid. The container holding assembly also includes a linkage which extends between the stabilizing arm and the pivot point. The linkage orients the stabilizing arm when the back ends of the stabilizing arm transit the slots secured to the lid. A bale arm is pivotally secured to the linkage. The bill arm includes an extension and a container receiving arm. The bale arm prevents the lid from moving out of the open position when the container receiving arm receives a container thereon. The container receiving arm extends between two extensions of the bale arm and is not secured to any other structure. To rings in the base have slots. The slots received the container receiving arm therein when the container receiving arm abuts the base preventing the container receiving arm from sliding along the base.

7 Claims, 3 Drawing Sheets



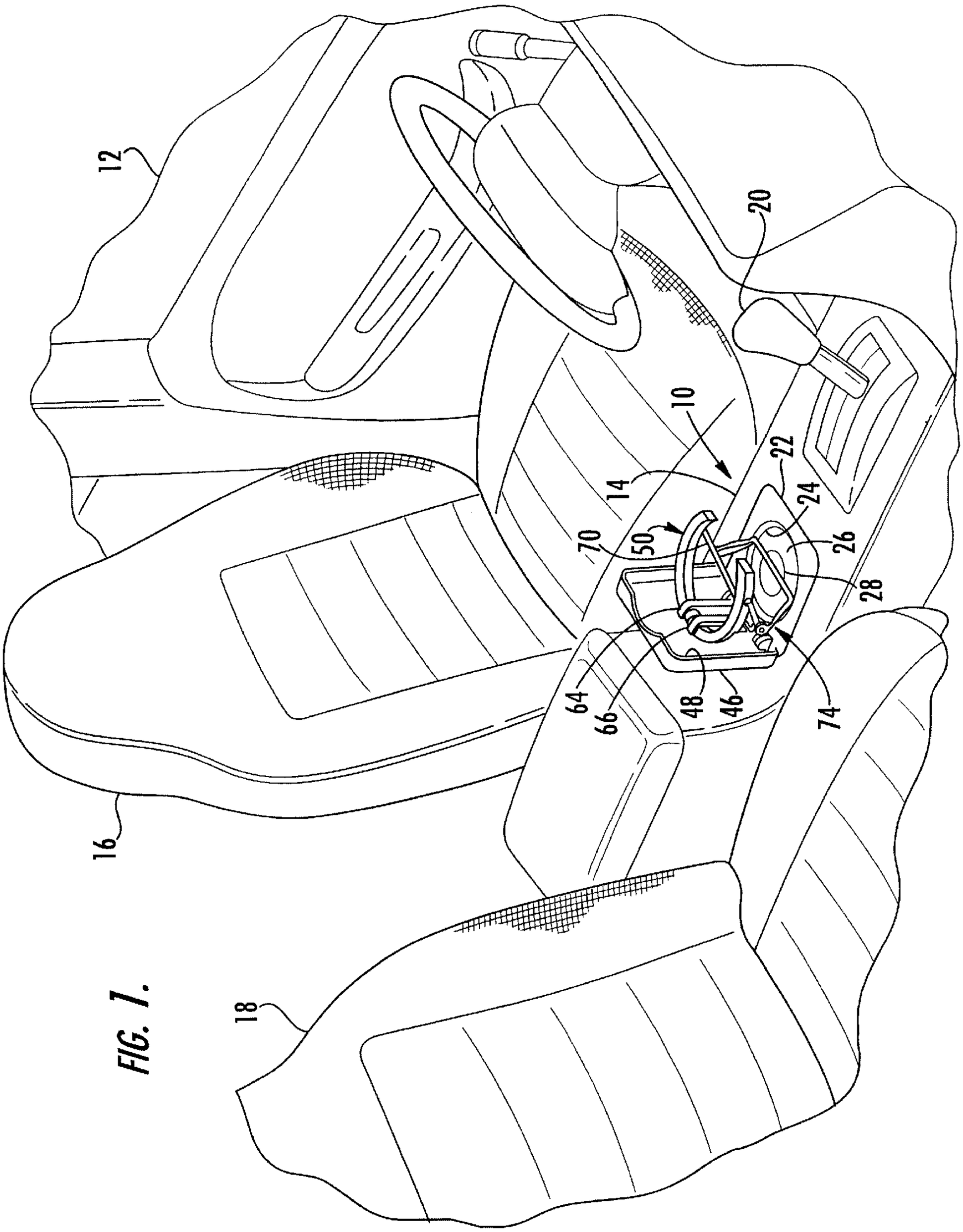
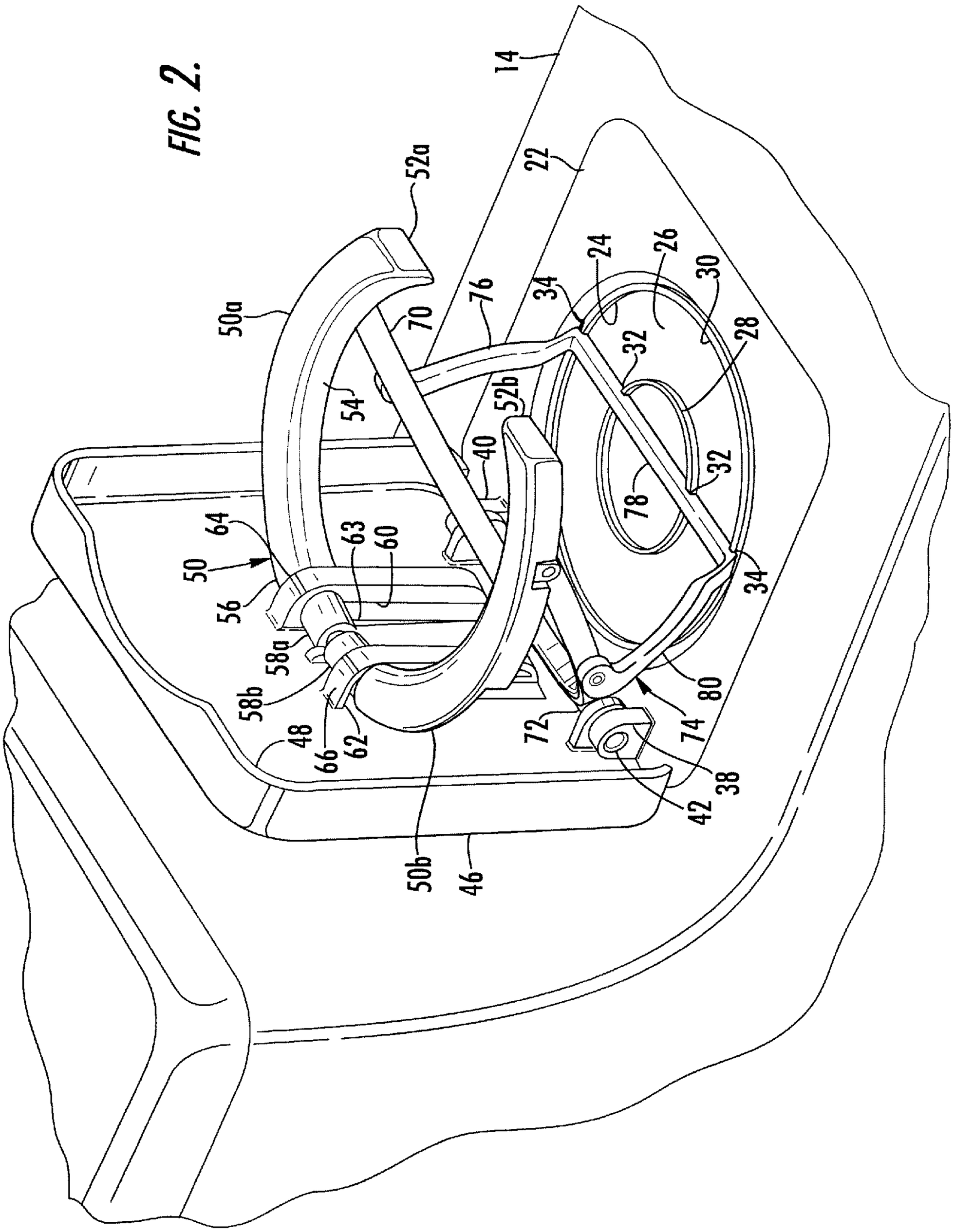


FIG. 1.

FIG. 2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38
42
50b
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FIG. 4.

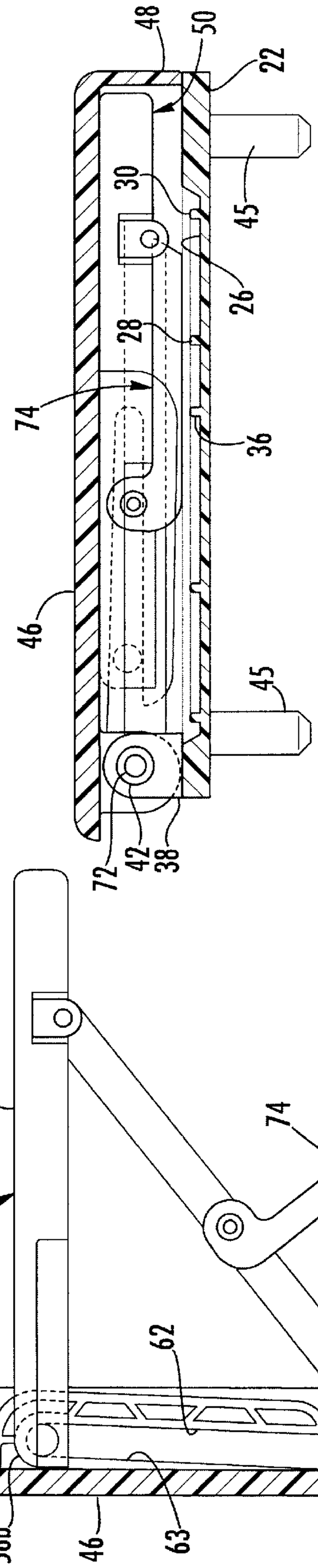
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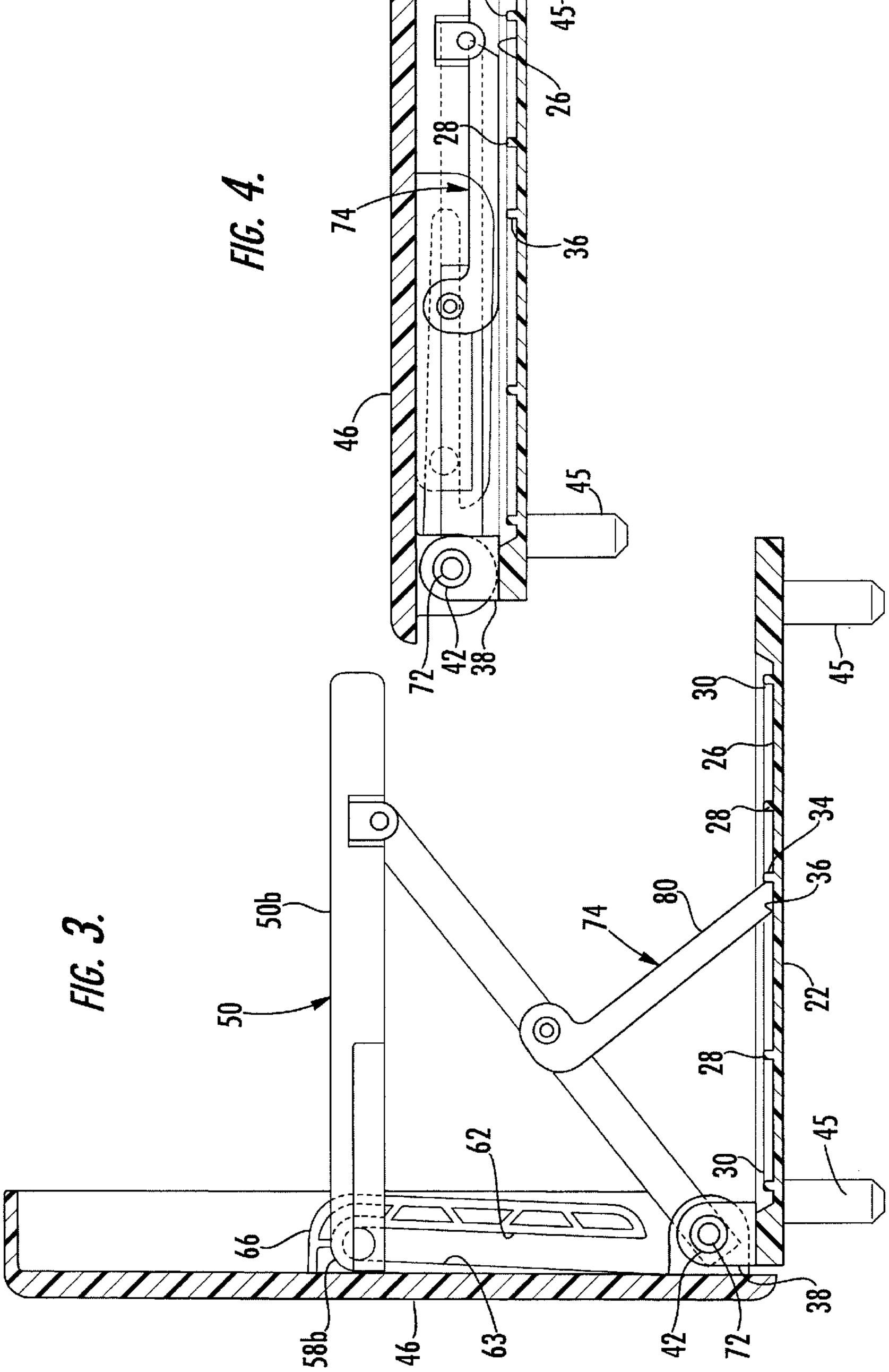
FIG. 3.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50b
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CONTAINER HOLDING ASSEMBLY

BACKGROUND ART

1. Field of the Invention

The invention relates to a container holding assembly for a motor vehicle. More specifically, the invention relates to a container holding assembly having a pivotal lid.

2. Description of the Related Art

Container holding assemblies in motor vehicles are installed in every imaginable position in the passenger compartment thereof. This is partly due to the addition of other components and, in some instances, the desire to create a cockpit affect resulting in the clustering of components near each other. A non-exhaustive list of operating components that may be found in the passenger compartment include a parking brake, transmission shift lever, window controls, coin holders, compartment doors, ashtrays and the like. A disadvantage develops as the container holding is placed adjacent or in close proximity to these operating components. More specifically, as the space surrounding the container holding assembly becomes more congested, the more likely it will be that someone or something may come in contact with the lid of the container holding assembly, or the container itself, resulting in the collapsing of the container holding assembly and the spilling of the contents of the container.

U.S. Pat. No. 5,692,718, issued to Bieck on Dec. 2, 1997, discloses a container holding device. The container holding device is a tray-type assembly and is movable between a retracted position and an extended position. A return member prevents the tray from being accidentally returned to its retracted position while it is holding a container. The return member would not adequately prevent a lid that pivots to a position perpendicular to its base.

SUMMARY OF THE INVENTION

A container holding assembly includes a base defining a planar surface and a pivot point disposed relative thereto. The container holding assembly also includes a lid that is pivotally secured to the base at the pivot point. The lid is movable between a closed position covering the base and an open position providing access to the base. A stabilizing arm is connected to the lid. The stabilizing arm is movable between a retracted position when the lid is in the closed position and a stabilizing position when the lid is in the open position. The stabilizing arm stabilizes a container when the container is placed on the base. A linkage extends between the stabilizing arm and the pivot point orienting the stabilizing arm when in each of the retracted and stabilizing positions. A bale arm is pivotally secured to the linkage. The bale arm includes an extension and a container receiving arm. The bale arm prevents or locks the lid in the open position when the container receiving arm receives the container thereon.

The advantage associated with the invention is the ability to provide a stable container holding assembly in a congested environment. More specifically, the container holding assembly includes the bale arm which allows the user of the container holding assembly to use the container holding assembly with the confidence of having a container or cup held by the container holding assembly without the risk of tipping the container or cup by inadvertently hitting the lid out of its open position. This is an important feature because spilled containers provide unwanted distractions and affect the cleanliness of the passenger compartment as well as the clothing of the passengers.

BRIEF DESCRIPTION OF THE DRAWINGS

Other advantages of the invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings, wherein:

FIG. **1** perspective view of one embodiment of the invention shown in a passenger compartment, partially cut away, of an automotive vehicle;

FIG. **2** is a perspective view of one embodiment of the invention;

FIG. **3** is a cross-sectional side view of one embodiment of the invention shown in a use position; and

FIG. **4** is a cross-sectional side view of one embodiment of the invention shown in a storage position.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIG. **1**, a container holding assembly ("cup holder") is generally indicated at **10**. The cup holder **10** is located in a passenger compartment **12** of a motor vehicle (not shown). The cup holder **10** is shown to be mounted to a console **14** between a driver seat **16** and a passenger seat **18**. A transmission shift lever **20** extends out of the console **14** at a position disposed adjacent the cup holder **10**. It should be appreciated by those skilled in the art that the cup holder **10** may be positioned anywhere within the passenger compartment **12** so long as it is capable of functioning.

Referring to FIGS. **1** and **2**, the cup holder **10** includes a base **22** that is mountable to a structure. As shown in the Figures, the structure is the console **14**. The base **22** defines a recess **24** for receiving a bottom of a cup or container (not shown) therein. The recess **24** defines a bottom surface **26** that includes two rings **28, 30** extending up therefrom. These rings **28, 30** are anti-tipping rings that prevent the cup from tipping by preventing the bottom of the cup or container ("cup") from slipping along the bottom surface **26** of the recess **24**. Each of the rings **28, 30** have two cuts **32, 34**. The cuts **32, 34** define a channel **36** which will be discussed in greater detail subsequently. Extending up from the base **22** are two posts **38, 40**. Each of the posts **38, 40** define a hole **42, 44**. The holes **42,44** are coaxial and define a pivot point. The pivot point is set up from and disposed relative to the base **22**. Mounting flanges **45** are used to mount the base **22** to the console **14**.

Pivotally secured to the base **22** is a lid **46**. The lid **46** is pivotally secured to the base **22** at the pivot point. The lid **46** is movable between a closed position covering the base **22** and an open position providing access to the base **22**. A peripheral lip **48** extends around the lid **46** covering the entire mechanism of the cup holder **10** when the lid **46** is in the closed position.

A stabilizing arm **50** is connected to the lid **46**. The stabilizing arm **50** is movable between a retracted position when the lid **46** is in its closed position and a stabilizing position when the lid **46** is in its open position. The stabilizing arm **50** stabilizes the cup that is placed on the base **22**. In the embodiment shown in the Figures, the stabilizing arm **50** has two halves **50***a*, **50***b*. The two halves **50***a*, **50***b* are arcuate in shape and each extends out to a distal end **52***a*, **52***b*. The distal ends **52***a*, **52***b* do not meet allowing for odd-shaped cups or cups with handles which will be held by the cup holder **10**. While not shown, the stabilizing arm **50** may include rubber spacers along an interior surface **54** of the stabilizing arm **50** to provide for adjustment in cups of different dimensions.

A middle section, generally indicated at **56**, of the stabilizing arm **50** is retained in a position of close proximity to the lid **46**. As is shown, the middle section **56** may include two back ends **58***a*, **58***b*, each of which being the end of one of the halves **50***a*, **50***b* of the stabilizing arm **50**. The back ends **58***a*, **58***b* move inside two slots **60**, **62** that are defined by protrusions **64**, **66** which extend out from an interior surface **68** of the lid **46**. The slots **60**, **62** are generally parallel to the interior surface **68**. A ramp surface **63** forces the back ends **58***a*, **58***b* away from the lid **46** as they travel up the slots **60**, **62**. The protrusions **64**, **66** have a honeycomb structure reducing the weight thereof. The slots **60**, **62** are open-ended at a lower end thereof allowing for the removal of the back ends **58***a*, **58***b*. The removal of the back ends **58***a*, **58***b* would only be required during maintenance and would not be required during the normal operation of the cup holder **10**.

A linkage **70** extends between the stabilizing arm **50** and the pivot point defined by the holes **42**, **44** in the posts **38**, **40**. The linkage **70** orients the stabilizing arm **50** when the stabilizing arm **50** moves between its retracted and stabilizing positions. The stabilizing arm **50**, linkage **70** and lid **46** move with respect to each other as the lid **46** moves between its open and closed positions. The linkage **70** is U-shaped with a linkage base **72** fixedly secured to and extending tangentially out from the base of the linkage **70**. The two ends of the linkage base **72** are received by the holes **42**, **44** allowing the linkage **70** to pivot about the linkage base **72**.

The cup holder **10** includes a bale arm, generally indicated at **74**. The bale arm **74** is secured to the linkage **70**. The bale arm **74** includes an extension **76** and a container receiving arm **78**. The bale arm **74** is pivotally secured to the linkage **70**. Although not shown, the bale arm **74** is spring biased such that it would rest up against the linkage **70**. When the lid **46** is moved to its open position perpendicular to the base **22**, a cup being received through the stabilizing arm **50** will force the bale arm **74** downwardly due to the weight of the cup on the container receiving arm **78**. The container receiving arm **78** stops when it abuts the bottom surface **26** of the base **22** after a cup is placed within the cup holder **10**. The container receiving arm **78** will not move along the bottom surface **26** because the container receiving arm **78** will be received within the channel **36** defined by the two cuts **32**,**34** in the rings **28**,**30**. Therefore, when the container receiving arm **78** is received within the two cuts **32**, **34**, the bale arm **74** prevents the accidental movement of the lid **46** out of the open position. In other words, the container receiving arm **78** locks the position of the lid **46**, stabilizing arm **50** and the linkage **70** with respect to each other, thus providing a stable and protected area to place a cup within the passenger compartment **12** of the motor vehicle. Similar to the linkage, the bale arm **74** is U-shaped including the extension **76**, a second extension **80** and the container receiving arm **78** extending therebetween.

We claim:

1. A container holding assembly comprising:

a base defining a planar surface and a pivot point disposed relative thereto;

a lid pivotally secured to said base at said pivot point movable between a closed position covering said base and an open position providing access to said base;

a stabilizing arm connected to said lid, said stabilizing arm movable between a retracted position when said lid is in said closed position and a stabilizing position when said lid is in said open position, said stabilizing arm stabilizing a container when the container is placed on said base;

a linkage pivotally connected to said stabilizing arm and to said pivot point orienting said stabilizing arm when in each of said retracted and stabilizing positions; and

a bale arm pivotally secured to said linkage, said bale arm including an extension and container receiving arm, said bale arm preventing (locking) said lid in said open position when container receiving arm receives the container thereon.

2. A container holding assembly as set forth in claim **1** wherein said base includes a channel for holding said container receiving arm from sliding along said base when said container holding assembly is holding the container.

3. A container holding assembly as set forth in claim **2** wherein said bale arm includes a second extension such that said container receiving arm extends between said extension and said second extension.

4. A container holding assembly as set forth in claim **3** wherein said base includes an anti-tipping ring defining said channel.

5. A container holding assembly as set forth in claim **4** wherein said stabilizing arm includes two arcuate arms.

6. A container holding assembly as set forth in claim **5** wherein said lid includes two slots defining paths for said arcuate arms to pass when said stabilizing arm is moving between said retracted and stabilizing positions.

7. A container holding assembly as set forth in claim **6** wherein said base includes a recess for receiving the container therein.

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